II. CLAIM AMENDMENTS

1. (Currently amended) A mobile station comprising:

an rf front end configured to receive data in bursts including training sequences, the rf front end including a mixer;

a frequency synthesizer for generating ~~for generating~~ a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator;

a burst training sequence identifier configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame and generate a training sequence identifying signal; and

a frequency correction signal ~~generaor means~~generator for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator, the frequency correction signal generator operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples.

2. (Previously presented) A mobile station according to claim 1, wherein the burst training sequence identifier comprises a correlator for determining a correlation value for part of a burst and each of a plurality of training sequences and identifying the burst training sequence according to the largest correlation value.

3. (Previously presented) A mobile station according to claim 2, wherein the correlator is configured, for each of said training sequences, to repeatedly cross-correlate a part of the training sequence part of a burst with a training sequence, moving said part of the training sequence part of a burst relative to said train sequence between cross-correlations.

4. (Previously presented) A mobile station according to claim 2, wherein the correlator is configured, for each of said training sequences, to repeatedly cross-correlate a part of a burst, greater than the training sequence part of the burst, with a training sequence, moving training sequences relative to said part of a burst between cross-correlations.

5. (Currently Amended) A mobile station according to claim 1, including a controller for tuning the mobile station to a control channel frequency to receive control channel bursts and wherein the burst training sequence identifier~~ying~~ means is configured to identify the training sequences of the bursts of said control channel.

6. (Cancelled)

7. (Previously presented) A mobile station according to claim 1, wherein said slots are contiguous.

8. (Original) A mobile station according to claim 7, wherein said slots are all of the slots of a frame.

9. (Currently amended) A mobile station comprising:

an rf front end configured to receive data in bursts including training sequences, the rf front end including a mixer;

a frequency synthesizer for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator;

a burst training sequence identifier configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame and generate a training sequence identifying signal; and

a frequency correction signal generator for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator, the frequency correction signal generator operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples,

wherein the burst training sequence identifying means comprises correlator for determining a correlation value for part of a burst and each of a plurality of training sequences and identifying the burst training sequence according to the largest correlation value.

10. (Currently Amended) A mobile station according to claim 9, wherein the correlator means is configured, for each of said training sequences, to repeatedly cross-correlate a part of the training sequence part of a burst with a training sequence, moving said part of the training sequence part of a burst relative to said training sequence between cross-correlations.

11. (Previously presented) A mobile station according to claim 9, wherein the correlator is configured, for each of said training sequences, to repeatedly cross-correlate a part of a burst, greater than the training sequence part of the burst, with a training sequence, moving training sequences relative to said part of a burst between cross-correlations.

12. (Currently amended) A mobile station comprising:

an rf front end configured to receive data in bursts including training sequences, the rf front end including a mixer;

a frequency synthesizer for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator;

a controller means for tuning the mobile station to a control channel frequency to receive control channel bursts;

a burst training sequence identifier configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame and generate a training sequence identifying signal; and

a frequency correction signal generator for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator, the frequency correction signal generator operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples,

wherein the burst training sequence identifier is configured to identify the training sequences of the bursts of said control channel.

13. (Currently amended) A mobile station for a communications network in which data is transmitted in bursts including training sequences, the station comprising:

an rf front end including a mixer;

a frequency synthesizer for generating for generating a local oscillator signal for said mixer, the frequency synthesizer including an electronically tunable reference oscillator;

a burst training sequence identifying means for generating a training sequence identifying signal; and

a frequency correction signal ~~generating means~~generator for generating a control signal for tuning said reference oscillator in dependence on said training sequence identifying signal so as to correct an error in the frequency of said reference oscillator, the frequency correction signal generator operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples,

wherein the burst training sequence identifying means is configured to identify the training sequences of the bursts in a plurality of slots of a TDMA frame.

14. (Original) A mobile station according to claim 13, wherein said slots are contiguous.

15. (Original) A mobile station according to claim 14, wherein said slots are all of the slots of a frame.

16. (Currently amended) A method comprising:

receiving bursts of data including training sequences at a mobile station;

identifying the training sequences in the bursts in a plurality of slots of a TDMA frame and generating a training sequence identifying signal;

generating a tuning control signal in dependence on said training sequence identifying signal; the generating of the tuning control signal including operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples, and

applying the tuning control signal to a tunable reference oscillator in a frequency synthesizer that provides a local oscillator signal to a front end mixer to perform frequency correction.

17. (Original) A method according to claim 16, wherein identifying the burst training sequence comprises cross-correlating a part of a burst and a plurality of training sequences.

18. (Original) A method according to claim 17, wherein the cross-correlating comprises, for each of said training sequences, repeatedly cross-correlating a part of the training sequence part of a burst with a training sequence, moving said part of the training sequence part of a burst relative to said train sequence between cross-correlations.

19. (Original) A method according to claim 17, wherein the cross-correlating comprises, for each of said training sequences, repeatedly cross-correlating a part of a burst, greater than the training sequence part of the burst, with a training sequence, moving training sequences relative to said part of a burst between cross-correlations.

20. (Original) A method according to claim 16, including tuning the mobile station to a control channel frequency, wherein the received burst is a control channel burst.

21. (Cancelled)

22. (Previously presented) A method according to claim 16, wherein said slots are contiguous.

23. (Original) A method according to claim 22, wherein said slots are all of the slots of a frame.

24. (Currently amended) A method comprising:

receiving bursts of data including training sequences at a mobile station;

identifying training sequences of the bursts in a plurality of slots of a TDMA frame and generating a training sequence identifying signal;

generating a tuning control signal in dependence on said training sequence identifying signal, the generating of the tuning control signal including operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples; and

applying the tuning control signal to a tunable reference oscillator in a frequency synthesizer that provides a local oscillator signal to a front end mixer to perform frequency control,

wherein identifying the burst training sequence comprises cross-correlating a part of a burst and a plurality of training sequences of the bursts in the plurality of slots of the TDMA frame.

25. (Original) A method according to claim 24, wherein the cross-correlating comprises, for each of said training sequences, repeatedly cross-correlating a part of the training sequence part of a burst with a training sequence, moving said part of the training sequence part of a burst relative to said train sequence between cross-correlations.

26. (Original) A method according to claim 24, wherein the cross-correlating comprises, for each of said training sequences, repeatedly cross-correlating a part of a burst, greater than the training sequence part of the burst, with a training sequence, moving training sequences relative to said part of a burst between cross-correlations.

27. (Original) A method according to claim 24, including tuning the mobile station to a control channel frequency, wherein the received burst is a control channel burst.

28. (Cancelled)

29. (Previously presented) A method according to claim 24, wherein said slots are contiguous.

30. (Original) A method according to claim 29, wherein said slots are all of the slots of a frame.

31. (Currently amended) A method comprising:

receiving bursts of data including training sequences at a mobile station;

identifying a training sequence of the bursts in a plurality of slots of a TDMA frame and generating a training sequence identifying signal;

generating a tuning control signal in dependence on said training sequence identifying signal, the generating of the tuning control signal including operating upon a pair of samples of one of said bursts, wherein one sample of said pair of samples of said burst is distant from a second sample of said pair of samples; and

applying the tuning control signal to a tunable reference oscillator in a frequency synthesizer that provides a local oscillator signal to a front end mixer.

32. (Currently Amended) A method according to claim 31, including tuning the mobile station to a control channel frequency, wherein the received bursts are ~~a~~ control channel bursts.